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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
|-----------------|-------------|----------------------|---------------------|
| 09/111,978 | 07/08/98 | BIEMAN | L 139,032USR |

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EXAMINER

PHAM, H

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 09/16/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/111,978

Applicant(s)
Leonard H. Bieman

Examiner
Hoa Q. Pham

Group Art Unit
2877



☒ Responsive to communication(s) filed on Jul 8, 1998

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-85 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-85 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Reissue Applications

1. The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following:

a. The oath or declaration fails to state whether the inventor is a **sole inventor** of the invention claimed as required by 37 CFR 1.62(a)(4).

b. The oath or declaration must state that the person signing has reviewed and understands the contents of the specification, including the claims, **as amended by any amendment** specifically referred to in the oath or declaration as required by 37 CFR 1.63 (b)(1).

c. The oath or declaration fails to state that the person signing believes the named inventor to be the original **and first inventor** of the subject matter which is claimed and for which a patent is sound as required by 37 CFR 1.63 (b)(2).

d. The oath or declaration must state that the person signing acknowledges the duty to disclose to the Office **all** information known to the person to be material to patentability as defined in 37 CFR 1.56 as required by 37 CFR 1.63 (b)(3).

e. The declaration, page 2, item 11, refers "new claim 40 is an independent claim"; however, such independent claim was not found. Should it be changed to --claim 30--?

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2. Claims 1-85 are rejected as being based upon a defective reissue declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the declaration is set forth in the discussion above in this Office action.

3. The original patent, or an affidavit or declaration as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.

Claim Rejections - 35 USC § 112

4. Claims 33 and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 33 recites the limitation "and amplitude values" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 57 should end by a period ".".

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 30, 32-33, 35, 36, 38-42, 44-46, 48, 52-58, 60, 62-63, 65-66, 69-72, 74-76, 78, and 82-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeyama et al (5,450,204) in view of Halioua et al (4,641,972) .

Shigeyama et al (of record) discloses an inspection device for inspecting printed state of cream solder comprising steps of: projecting a pattern of light (column 3 lines 35-36); maintaining the projected pattern of light and the detector in a substantially fixed relation to each other (see figure 1, only the circuit board (10) is moved); moving the object (10) relative to the pattern light so as to scan the projected pattern of light across a surface of the object; imaging the imagable light signal onto the detector (3); measuring with the detector an amount of light from the surface of the object; and computing dimensional information based on the measured step (figures 1 and 6). Shigeyama et al does not explicitly teach that the detector having a first and second and third detector element, wherein the surface of the object is imaged onto the first detector element at a first phase of the projected pattern of light, onto the second detector element at a second phase and onto the third detector element at a third phase; however, such a feature is known in the art, for example as taught by Halioua et al. Halioua et al (of record), form the same field of endeavor, discloses a method and apparatus for surface profilometry in which each phase of the projected pattern of light is detected by each detector in the detector array (120) (see column 4 lines 10-12, and line 62 through column 5 line 4). Those of ordinary skill in the art at the time the invention was made to replace the detector of Shigeyama et al by a detector array as taught by Halioua et al

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because they would function in the same manner. A substitution for each other is generally recognized as being within the level of ordinary skill in the art.

Regarding claims 32, 36, 38, 44, 62, 66, 74, and 79; Shigeyama et al teaches that the optical axis of the detector (3) is perpendicularly to the surface of the object (10) (figure 1).

Regarding claims 39-41, 52-54, 69-71, and 82-84; Shigeyama et al does not explicitly teach that two projected patterns of light are used; however, it would have been obvious to one having ordinary skill in the art to add another projected pattern light into the invention of Shigeyama et al so that the two projected patterns of light are alternately projected. The rationale for this modification would have arisen from the fact that using an extra projected light would provide a better performance of the light projection system.

7. Claims 31, 34, 37, 43, 47, 49-51, 59, 61, 64, 67-68, 73, 77, 79-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shigeyama et al and Halioua et al as applied to claims 30, 32-33, 35, 36, 38-42, 44-46, 48, 52-58, 60, 62-63, 65-66, 69-72, 74-76, 78, and 82-85 above, and further in view of PRIOR ART.

Both Shigeyama and Halioua et al fail to teach or suggest that the detector is a tri-linear array camera or a CCD camera in which each detector element includes a plurality of detector pixels elements or a row of CCD sensing elements; however, such a feature is known in the art as stated in column 3 lines 50-56, **“a camera of the optical head 12 preferably includes a solid state image sensor such as a tri-linear array camera 24. For example, the camera 24 may be**

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the Kodak CCD chip model KLI-2103 which has 3 rows of detector of sensing elements 25".

Thus, it would have been obvious to one having ordinary skill in the art to replace the detector of Shigeyama or Halioua et al by a tri-linear array camera which is known in the art. The rationale for this modification would have arisen from the fact using such tri-linear camera would detect first, second, and third phase of the projected pattern of light simultaneously, therefore the speed of measurement is improved.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Hoa Pham whose telephone number is (703) 308-4808. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pham/hp

July 08, 1999



Hoa Q. Pham
Primary Examiner